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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/801,351	03/07/2001	Calvin D. Ostler	5038.1 P	4906

28213 7590 05/16/2005

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SAN DIEGO, CA 92121-2133

EXAMINER

WILSON, JOHN J

ART UNIT PAPER NUMBER

3732

DATE MAILED: 05/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

SP

**Office Action Summary**

Application No.

09/801,351

Applicant(s)

OSTLER ET AL.

Examiner

John J. Wilson

Art Unit

3732

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 18 February 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-56, 103 and 104 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-56, 103 and 104 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 12/13/04, 2/18/05.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 5-10, 13-21, 25-27, 30-39, 43-48, 51-56, 103 and 104 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cao (6331111) in view of Mills et al (WO 99/16136). Cao shows a first substrate 702 and Fig. 7, cups 702a and Fig. 9, LEDs 701b and Fig. 9, electric wiring 704a and 704b, heat sink 402b, Fig. 4b and Fig. 12 (1203 and 1222) and control circuitry, Figs 1a and 1b. Cao does not show using a heat pipe between the substrate and the heat sink. Mills shows a heat pipe 45, pages 14 and 15, and Fig. 5, located between the LED substrate 48 and heat sink 51. It would be obvious to one of ordinary skill in the art to modify Cao to include a heat pipe as shown by Mills in order to better distribute the heat away from the source. While Mills further teaches that if required, additional cooling means 50 may be used. It would be further obvious to no use alternative 50 and to connect the heat sink 51 directly to the heat pipe as a matter of not using possible additional elements of Mills. As to claims 6 and 7, see reflective coating at column 9, lines 42-44, of Cao. As to claim 9, the use of silver for a reflective coating is well known and would have been an obvious matter of choice to the skilled artisan in the use of well known materials for a well known result. As to claims 13-16, the material used for the heat pipe is an obvious matter of choice in the use of well known heat transfer materials. As to claim 17, to use a base as an anode is well known and obvious to the

skilled artisan. As to claims 18 and 19, see multiple wavelengths at column 1, lines 29-34, of Cao. The specific wavelengths used are obvious matters of choice in the degree of a known parameter to one of ordinary skill in the art. As to claim 38, see lens 1407 of Cao.

Claims 2, 22 and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cao (6331111) in view of Mills et al (WO 99/16136) as applied to claim 1 above, and further in view of Janzen et al (4893354). The above combination does not show the use of diamond substrate. Janzen shows a diamond substrate 25f, Fig. 7, column 4, lines 44-48. It would be obvious to one of ordinary skill in the art to modify the above combination to include using a diamond substrate as shown by Janzen in order to better mount the LEDs.

Claims 3, 4, 11, 12, 23, 24, 28, 29, 41, 42, 49 and 50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cao (6331111) in view of Mills et al (WO 99/16136) as applied to claim 1 above, and further in view of Kennedy (5420768). The above combination does not show a metal (aluminum) heat sink. Kennedy teaches forming heat sinks from metal, and specifically from aluminum, column 2, line 33. It would be obvious to one of ordinary skill in the art to modify Cao to include the use of aluminum to form the heat sink as shown by Kennedy in order to efficiently move the heat.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John J. Wilson whose telephone number is 571-272-4722). The examiner can normally be reached on Monday through Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kevin P. Shaver, can be reached at 571-272-4720). The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



**John J. Wilson**  
**Primary Examiner**  
**Art Unit 3732**

jjw  
May 5, 2005